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BRIEFER ARTICLES

A CONVENIENT MICROTOME KNIFE

(WITH FIVE FIGURES)

Few people know how to sharpen a microtome knife, and those who have acquired the art usually have something else to do. The professional knife sharpener will grind out the nicks but will not produce the edge needed for paraffin cutting, and it is useless to explain what one wants, because he sharpens operating knives for the best surgeons in the city, and what is good enough for them is good enough for a botanist.

Several years ago we suggested that if manufacturers would make a clamp to hold the blade of the Gillette safety razor, its hard, even edge would doubtless be satisfactory for microtome sections, and the blades being rather cheap, it would not be necessary to sharpen them when they became dull. Numerous attempts to make a holder proved more or less unsatisfactory. Some of these discarded holders were very much like one described in the current number of *Annals of Botany*.[1] The objection to this knife is that the blade, being held between two flat pieces of steel, is not absolutely rigid. Further, such a holder clamped directly into the microtome does not place the edge of the blade in the most favorable position for cutting.

After our own efforts had failed to secure the results which we believed the cutting edge of the safety razor should produce, we prevailed upon a well-known optical company to make a sample holder, and this was fairly satisfactory, but the price ($13) seemed practically prohibitive.

We then explained to a skilled mechanic[2] just what we wanted, and he made a holder which is quite satisfactory and costs only $3. It is made of brass and can be used in either rotary or sliding microtomes; the essential features can be seen in figs. 1–5. About 13 or 14 cm. is a convenient length for the holder. The sectional views show that the two pieces are not straight, but are slightly curved, a feature which insures great rigidity, and also allows the paraffin block to clear readily. The curve is easily secured by cutting the two parts of the holder from two large brass tubes, one being about 12.5 cm. in diameter, and the other fitting as closely within it as an ocular in a microscope. The thickness should be about 3 mm.

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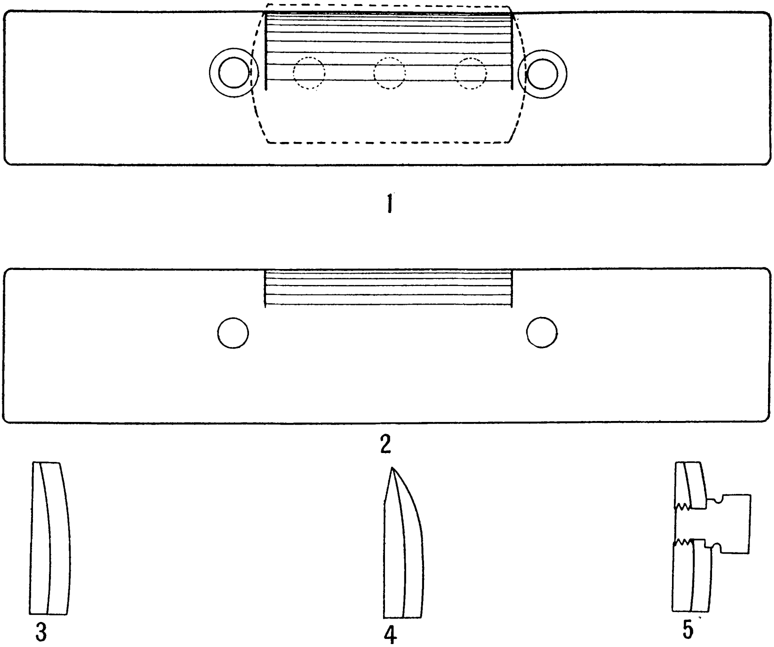
[1] BENTLEY, B. H., An arrangement for using the blades of safety razors in the microtome. Annals of Botany **25**: 273–275. 1911.

[2] A. W. STRICKLER, 1311 E. 57th Street, Chicago, Ill.



FIGS. 1–5.—Fig. 1, back view; fig. 2, front view (toward the paraffin block); fig. 3, end view; fig. 4, sectional view at the middle; fig. 5, sectional view at the screws, which are represented by the double circles in fig. 1, and by the single circles in fig. 2.

It is neither necessary nor desirable to have pins fitting the three holes in the knife, since they add nothing to the rigidity and even interfere with the insertion and adjustment of the blade. The binding screws should be as close as possible to the blade, and not at the ends of the holder, as shown in the form described in the *Annals of Botany.*

With the Gillette blade in this holder, we have cut smooth sections 2 and 3 μ in thickness, and have also cut large sections 2 cm. in diameter and 15 μ in thickness, even such refractory objects as the strobili of *Isoetes* and *Selaginella* cutting as smoothly as with a first-class microtome knife in perfect condition.

In general, the blade should project only far enough to allow the paraffin block to clear. Naturally, the blade might project a little farther in case of thin delicate sections than with thick hard ones, but a little experience will accustom one to the use of such a knife, and the luxury of having at all times a fresh keen cutting edge will be appreciated by all who have known the drudgery demanded by the microtome knives in general use.—CHARLES J. CHAMBERLAIN, *The University of Chicago.*

ADDITIONS TO THE GRASSES OF CUBA

Since the publication of the *Catalogue of the grasses of Cuba*,[3] several additional species of grasses have been contributed to the National Herbarium by Brother LEÓN of the Colegio de la Salle, Habana. The following is a list of these:

MANISURIS EXALTATA (L. f.) Kuntze, Rev. Gen. Pl. **2**:779. 1891.

Stegosia exaltata Nash, N. Amer. Fl. **17**:84. 1909.

This species is retained provisionally in *Manisuris* until the genera of Andropogoneae are more carefully examined.

Sancti Spiritus, *León* 847.

ANDROPOGON SQUARROSUS L. f. Suppl. 433. 1781.

Habana, *León* 1581. Introduced.

ANDROPOGON CARICOSUS L. Sp. Pl. ed. 2. **2**:1480. 1763.

Guanabacoa, *León* 2013. Introduced.

Sorghastrum agrostoides (Speg.).

Andropogon agrostoides Speg. Pl. Nov. Nonnul. Amer. Austr. Dec. **2**:27. 1883.

Sancti Spiritus, *León* 895.

PASPALUM BLEPHAROPHYLLUM Nash, in Small Fl. Southeast. U.S. 71. 1903.

Marianao, *León*, 779.

PASPALUM HELLERI Nash, Bull. Torrey Club **30**:376. 1903.

Santiago de Cuba, *León* 951.

PASPALUM MONOSTACHYUM (H. B. K.) Vasey, in Chapm. Fl. South. U.S. ed. 2. 665. 1889.

Zaza de Tunas, Santa Clara, *León* 947. The spikelets are smaller than in the typical form.

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[3] HITCHCOCK, A. S., Contr. Nat. Herb. **12**:183–258. 1909.